

### REMARKS

Applicants acknowledge the Final Office Action mailed on June 2, 2005. Applicants also would like to thank the Examiner for the telephonic interview conducted on October 25, 2005. Applicants file a Request for Continued Examination with this Amendment and request reconsideration of the present application in view of the foregoing amendments and the following remarks.

Claims 1-18 are currently pending in the present application. The pending claims stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,186,054 to Brayton, et al. In rejecting the claims as obvious, the Examiner asserts:

Brayton, et al. teach a method of producing blast furnace coke by compacting finely divided coal into a compact such that the bulk density is sufficiently increased to be capable of conversion into coke. The compacted coal cake is then carbonized in an oven, which provides coke, which can be used in steel making productions. [Note, Column 2, Lines 15-60]. The compacting means can be in [any] form suitable for compacting the finely divided coal to [achieve] the desired coal compact. The preferred method of compacting is by using briquetting rolls, but is not limited to this type of compaction. The coal compact is binderless and after compaction the compact is placed into a coking oven wherein the compacted coal is carbonized into coke, which is suitable for [use] in steel and iron making. Brayton '054 teaches that the coal compact has a specific gravity of at least about 1.1.

See Office Action, p. 2-3. Applicants respectfully disagree. In order to proceed to issuance, however, Applicants have amended independent claims 1, 7, 13 and 14 in order to describe better the present invention. For the reasons set forth below, Applicants believe all claims pending in the present application are allowable over the Brayton reference.

### INDEPENDENT CLAIMS 1, 7 AND 14

With this response, Applicants amend claim 1 to require "a coke with an apparent specific gravity of about 1.05" thereby incorporating now cancelled claim 4. Similarly, Applicants amend claim 7 to include an apparent specific gravity of about 1.05 of the claimed coke. Claim 14 includes a similar limitation and has been amended to correct grammatical

errors. Applicants believe the Brayton reference fails to teach this subject matter. It should be noted that Applicants amended claim 6 in order to ensure proper antecedent basis with respect to now canceled claim 4.

The Brayton reference teaches a method including the step of compacting coal by applying high pressures to the finely divided coal. The compaction results in the coal having a specific gravity of at least about 1.1 and preferably about 1.15. See Brayton, column 3, lines 34-38. The Examiner relies upon this language in explaining the rejection of the pending claims.

Applicants assert this language is not applicable to the specific gravity limitations recited in independent claims 1, 7 and 14, as these limitations relate to the specific gravity of **the coke** resulting from heating, compaction and coal blend rather than the **compacted coal** prior to heating discussed in Brayton. Moreover, Brayton is silent as to the specific gravity of **the coke** following the heating step. Thus, Applicants believe claims 1, 7 and 14 are allowable over the Brayton reference as the claims require **the coke** to have a specific gravity of about 1.05 following heating.

As discussed in the telephonic interview, Brayton focuses on compacting coal prior to heating. In general, the art believed that the more compact the coal prior to heating the better the resulting product. The inventors of the present invention recognized that this assumption was not always true, and after careful experimentation, recognized that coke with a specific gravity as claimed is preferred.

In order to better clarify this distinction, Applicants include herein, as Exhibit A, a series of photographs depicting coke and coal. The two photographs located on the left hand side of exhibit A depict coke. The upper photograph shows three pieces of coke lying on a table, and the lower photograph shows a large pile of coke with a hard hat included in the photograph for reference. Conversely, the photographs on the right side of Exhibit A depict coal. The upper photograph shows coal lying on a table, and the lower photograph depicts a pile of coal outdoors with a hardhat included in the frame of the photograph for reference.

These photographs clearly show the differences between coke and coal. Accordingly, Applicants believe the present invention is patentable over Brayton, due to the present invention reciting the specific gravity of coke, while Brayton relates to the specific gravity of coal, a different material.

### **INDEPENDENT CLAIM 13**

Applicants have amended claim 13 in order to claim more distinctly the invention set forth therein. With this amendment, Applicants believe it is clear that applying a force to the volume of coal results in a single mass of compacted coal. This single mass of compacted coal is disposed into a non-recovery type oven. Paragraphs 30 and 31 of the present application support this amendment.

The Brayton reference does not teach discharging a single mass of coal into the oven for heating. Conversely, in the Brayton reference, following compaction, the coal is sent to breaking means prior to carbonization. The breaking means pulverizes the compacted coal forming a plurality of broken compacts. See Brayton, column 5, lines 18-23. Accordingly, the Brayton reference does not teach a method of transporting a single mass of compacted coal to the oven for carbonization, as set forth in independent claim 13. Thus, Applicants believe the Brayton reference does not render claim 13 obvious, and claim 13 is allowable over the cited prior art.

### **Non-Recovery Type Oven Limitation**

In addition to the reasons set forth above, Applicants also believe all pending claims are allowable due to the non-recovery oven limitation discussed in during the interview with the Examiner. Applicants would like to summarize that point below.

The Brayton reference discloses a process for manufacturing coke utilizing a by-product oven. By-product ovens collect gas expelled during the coke process. This gas is essentially a waste gas for by-product ovens and does not affect the process in any manner. Conversely, the invention set forth in the claims relates to a process carried out in a non-

recovery or heat-recovery oven. Non-recovery ovens use the gas expelled during the process for fuel. Since the non-recovery ovens burn the by-product gases, the non-recovery ovens are considered to be more environmentally friendly than by-product type ovens.

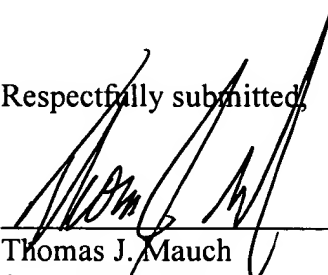
Since all of the independent claims in the present invention require that a non-recovery type oven be utilized in the process, Applicants believe the pending claims are allowable over the Brayton reference for this reason in addition to the reasons set forth above. Accordingly, Applicants believe the pending application is in condition for allowance.

### CONCLUSION

An earnest attempt has been made to respond fully and completely to the Office Action of June 2, 2005. For the reasons set forth above, Applicants believe that all independent claims are allowable over the prior art. Moreover, as all dependent claims depend from the independent claims discussed above, Applicants further believe all dependent claims are also allowable over the prior art. Thus, Applicants assert the pending application is in condition for allowance, and accordingly, passage to issuance is respectfully solicited.

If necessary to affect a timely response, please consider this paper a request for an extension of time, and charge any shortages in fees, or apply any overpayment credits, to Baker & Daniels' Deposit Account No. 02-0387 (26041.50057). Please do not include the payment of issue fees.

Respectfully submitted,



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